

Effect of Having an Atrial Septal Defect on Postoperative Outcomes of Laminectomy in Adult Patients

Background: An atrial septal defect (ASD) is a congenital heart defect in which there is a pathologic channel between the atria. This channel varies in size and may lead to potentially life-threatening complications such as arrhythmias and/or heart failure. The impact of having ASD on postoperative outcomes of adults undergoing laminectomy is poorly understood.

Objective: To compare postoperative outcomes and rates of complication between adult patients with ASD and a control cohort undergoing laminectomy surgery.

Methods: The National Inpatient Sample was queried to identify patients who underwent laminectomy surgery from 2005 – 2012. Patient demographics and incidence rates of patients diagnosed with ASD were reported. 1:1 propensity score match controlling for age, sex, and obesity status was performed. Univariate analysis was used to compare differences in postoperative complications and in-hospital mortality in the ASD cohort. Multivariate logistic regression analysis was used to determine laminectomy status as an independent risk factor for postoperative outcomes between the two cohorts.

Results: A cohort of 198 ASD patients and 198 non-ASD patients were identified. ASD patients who underwent laminectomy experienced higher rates of postoperative medical complications, pulmonary complications, acute renal failure, sepsis, deep vein thrombosis (DVT), and cerebrovascular events (all, $p < 0.05$). Additionally, patients with prior ASD diagnosis who underwent laminectomy were at increased risk for postoperative medical complications (OR=4.6), acute renal failure (OR=14.2), sepsis (OR=3.6), and cerebrovascular events (OR=4.8).

Conclusions: ASD patients who underwent laminectomy experienced higher rates of postoperative medical complications, pulmonary complications, acute renal failure, sepsis, DVT, and cerebrovascular events. These findings should be considered prior to laminectomy surgery in ASD patients and may help prepare providers for potential complications.